BREEDING OF THE WHITE-TAILED BLACK COCKATOO IN CAPTIVITY

By D. A. SAUNDERS, Division of Wildlife Research, C.S.I.R.O., Helena Valley, W.A.

The CSIRO Division of Wildlife Research at Helena Valley, W.A. has maintained a collection of short-billed White-tailed Black Coekatoos (*Calyptorhynchus baudinii latirostris*) in eaptivity since 1967. Initially, there were two males and two females eaught in the wild and held in a eonverted chieken run. No nest hollows were supplied and these birds made no attempt to breed.

In 1970, a large aviary was constructed (12 metres long x 6 metres high x 6 metres wide) around an old wandoo (*Eucalyptus redunca*), which was pruned to fit inside the aviary. Four nesting hollows were placed in the aviary, two attached to the wandoo and the other two to the side of the aviary.

of the aviary. In late November 1970, a pair were released into the large aviary, the other pair remaining in the small eage. In late October 1971 the female in the large eage (Female A) laid one egg which was broken shortly after. A second egg was laid in the same hollow but it was also broken. It appeared as if a claw had been pushed through the shell.

In the third week of September 1972, Female A laid one egg but made no attempt to incubate it.

made no attempt to incubate it. In October 1971 a new bank of holding aviaries was constructed, each flight area being 4.9 metres long x 2.4 metres high x 1.2 metres wide. Each flight had at least one hollow log at the end which also had weather screening round it. In November of that year five females and two males were eaught in the wild and added to the collection. One of the females and one of the males were paired in the wild and they were eaught together with their fledgling (Pair B). These birds and the pair from the old small eage were placed in the new aviaries, one male and one female together in each flight with the surplus females being placed together.

None of these pairs made any attempt to breed in these aviaries in 1972. In August 1973 Pair B were placed in the large aviary with Pair A. In the second week of September, Female A laid one egg, then another about one week later. She incubated these eggs for just over the 29 days required for incubation. Neither egg hatched and the female deserted.

Female B laid her first egg around 24 October 1973 and incubated it until it hatched in the third week in November. At about this time Female A laid two more eggs and incubated them for a month but neither hatched and she deserted them, too. The nestling of Female B died about 6 weeks after hatching. Neither pair made any further attempt to breed that season.

In 1974 Female A died of unknown causes and her male was removed from the big eage, leaving Pair B alone in the eage. During the breeding season of 1974, extensive earth works were earried out near the eoekatoo eages and none of the birds attempted to breed. In 1975 Female B laid one egg around 20 October in the same hollow

In 1975 Female B laid one egg around 20 October in the same hollow she used in 1973. She laid a second egg within the next ten days. The female incubated the eggs and one hatched around 18 November. The second egg failed to hatch.

No other pair in the other aviaries made any attempt to breed in any of these seasons.

The nestling was brooded continuously by Female B for about two weeks after hatching, and during this time she was fed by the male and occasionally went and fed and drank by herself. Once the female stopped brooding continuously the nestling was fed hy both parents in the morning and evening. The female continued brooding the nestling at night.

Towards the end of January 1976 the nestling started moving up and down the inside of the spout and spent progressively longer sitting in the entranee of the hollow. During this period the parents fed it at the entranee of the hollow. On the evening of 8 February when the nestling was just over eighty days it flew from the hollow. It was found next morning on the floor of the aviary with one leg paralysed. The fledgling may have hit its head on the aviary side and suffered concussion.

floor of the aviary with one leg paratysed. The fledging may have int its head on the aviary side and suffered concussion. The fledging was left on the ground and the parents spent their time sitting on the ground near it and continued to feed it on the ground. The fledgling remained on the ground until mid-March, during which time, its leg became more usable. About mid-March it started flying round the aviary and perched on the tree or on the eage floor. It had a lot of trouble landing due to its inexperience, but it gradually mastered the art of landing gently instead of flying full speed at the perch and crashing into it.

By the end of April it could fly very well and it had completely regained the use of its previously paralysed leg. Although it was feeding itself, it still begged continuously from its parents. This is not surprising as fledglings in the wild are dependent on their parents for several months after leaving the nest hollow.

During the breeding season the birds were given sunflower seed, mature marri (*Eucalyptus calophylla*) nuts, *Banksia grandis* fruits and *Pinus pinaster* cones. The adults fed the nestling sunflower seed most of the time, although they oceasionally gave it small amounts of the other foods.

This is the only published record, of which I am aware, of Whitetailed Black Cockatoos fledging young in captivity. Forshaw (1969) says "he understands . . . the White-tailed Black Cockatoo has recently been bred" but gives no details. Lendon (1973) on the other hand says he has "never heard of a successful breeding".

REFERENCES

FORSHAW, J. M. 1969. Australian Parrots. Lansdowne Press. LENDON, A. H. 1973. Neville W. Cayley's Australian Parrots in field and aviary. Angus and Robertson.

CLADOPHORA, EUTROPHICATION AND THE PEEL INLET

By B. DELL, School of Environmental and Life Sciences, Murdoch University.

In many rivers and lakes large growths of *Cladophora* are associated with nutrient-rich waters and can be said to be indicative of eutrophication (Piteairn and Hawkes, 1973). The natural enrichment of a body of water, leading to a rise in the level of available nutrients, such as nitrogen and phosphorus is known as eutrophication. Man often speeds up this process by polluting waters. Enormous accumulations of rotting algae build up in certain bays (e.g. Coodanup) of the Pcel Inlet. The dominant species is commonly called 'Goat-Weed,' a species of *Cladophora* existing as dark green balls I-3 cm in diameter. Associated with these balls, as a bright green surface mat, are an intertwined mixture of filamentous species of *Enteromorpha* and *Cladophora*. These mats are sometimes trapped over offshore beds of *Ruppia nuaritima*. In a few parts of the estuary large patches of *Chaetomorpha linum* are hazardous to boating.

Cladophora balls grow and accumulate in large offshore beds in water from 1 to 2.5 m deep. In summer, the algae rise from thick bottom patches, float near the surface of the water and then fall to the bottom. This cyclic pattern is probably eaused by evolved gas being trapped between the filaments.

During spring and summer, presumably when *Cladophora* is actively growing, the balls begin to accumulate on the shore of the Peel Inlet due to the action of water movement and onshore winds. In this manner, extensive accumulations may build up, for example, in the mouth of the Murray River and extend a short distance upstream.

Cross (1974) reports that after the late 1950's in a period of lower than average rainfall, a noticeable change occurred in the Peel Inlet and